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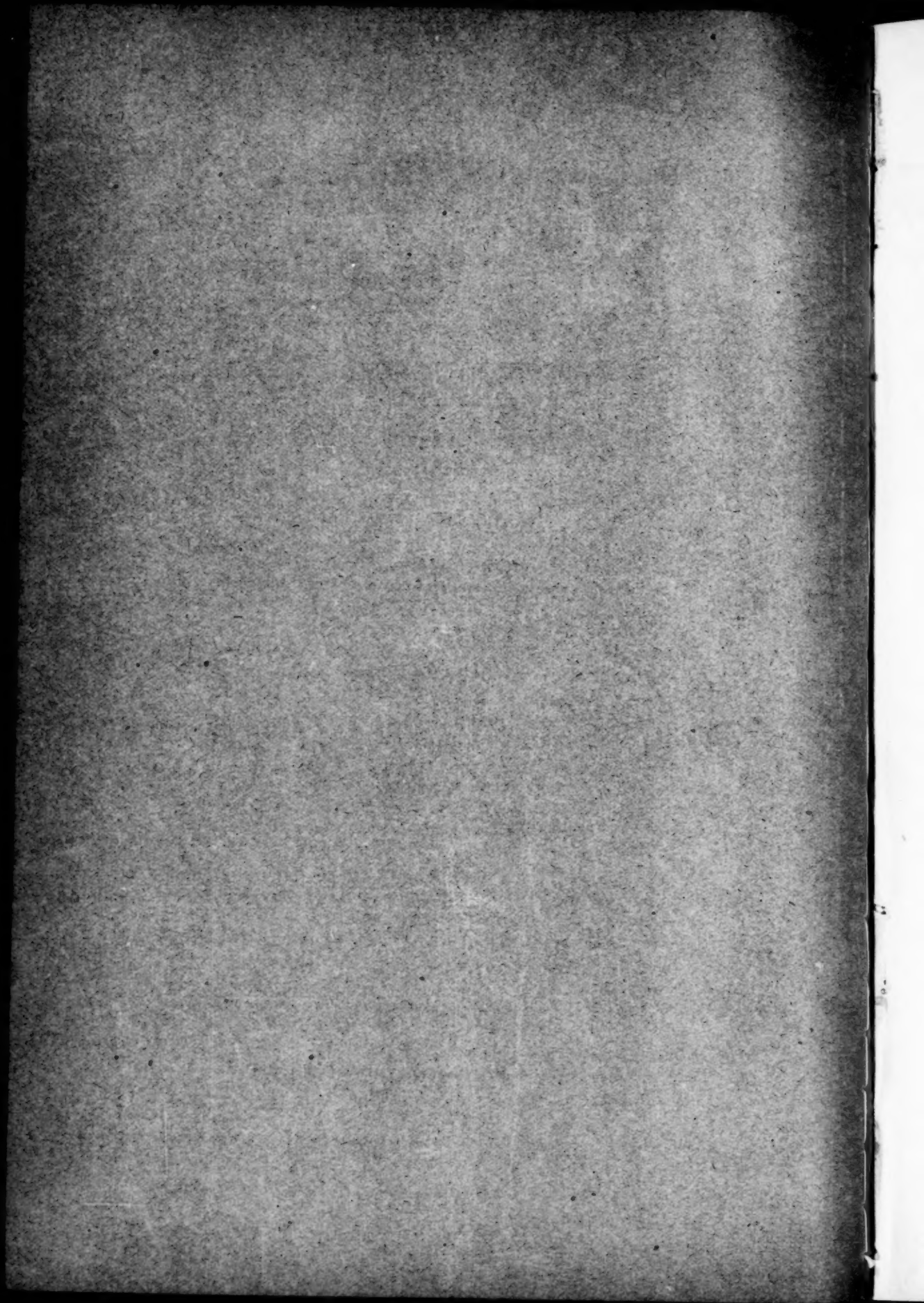
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ORIGINAL ARTICLES.

A PARTLY PIGMENTED NÆVUS OF THE CARUNCULA LACRIMALIS.

BY ADOLF ALT, M.D.,
ST. LOUIS, MO.

The growth the microscopical structure of which I desire to describe in the following was accompanied by the following note by Dr. H. D. Lamb:

"L. B., a woman 35 years of age, consulted Dr. W. H. Hardy on account of a small lump at the extreme inner corner of the left eye. This she stated had been present for 25 years, and in the last 5 years it had grown somewhat larger. It was never painful and she was quite unconscious of its presence. However, in the cooler parts of the year a crust formed on the growth, on the removal of which there occurred some bleeding.

"On inspection the growth was found to be soft, pinkish, and about the size of a large pea, proceeding from the left caruncle. It presented the macroscopic appearance of an hypertrophy of the caruncle.

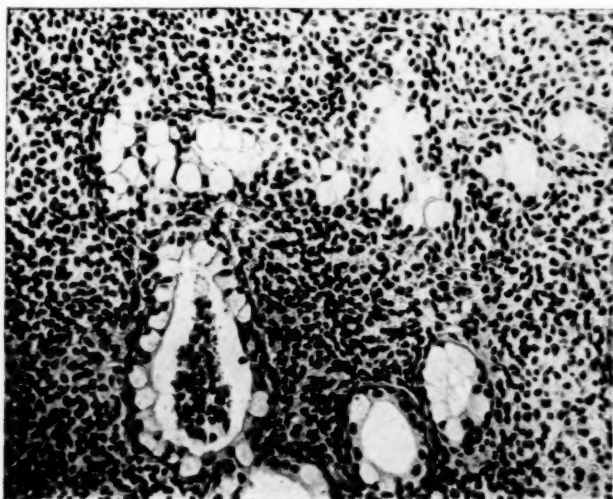
"After the subconjunctival injection of $\frac{1}{2}$ per cent. cocain combined with a small amount of adrenalin the tumor was easily dissected off with scissors. The specimen was fixed in formol."

The little tumor consists of an anterior more solid-cellular part and a posterior less compact part. The anterior more solid part is not in direct contact with the epithelial cover. Everywhere a varying quantity of a less compact connective tissue intervenes between it and the epithelium. This intervening tissue contains a considerable quantity of pigment.

The epithelium is pierced by a number of fine hairs and a few glandular excretory ducts.

Under a higher power the epithelial cover is seen to be of varying thickness. The tissue lying just underneath it is a connective tissue poor in cells. Many of these contain a granular yellowish brown pigment. The color varies in darkness, some being so dark that it is almost impossible to see their nucleus while in others the pigmentation is considerably lighter. There are, also, smaller and larger masses of pigment granules which lie apparently free in the tissue. This pigmentation is irregularly distributed and also reaches in some places farther into the depth of the tissues.

The main part of the tumor which, with a lobated surface so to speak, lies beneath the tissue just described, is composed of innumerable cells widely differing in size and shape, which are



in places more closely packed, in others not quite so close. While the tissue intervening between the epithelium and the naevus cells contains numerous small bloodvessels there are but very few to be found in the real naevus tissue. Of the numerous sebaceous glands present in the normal caruncle parts only, and no excretory ducts, are found.

The portions still existing are all transformed into small cystic cavities, lined with one or two layers of epithelial cells which are undergoing a regressive metamorphosis. These cells are most of them transformed into spherical bodies containing a more or less clear material, probably a mucoid degeneration. That this destruction of the glandular tissue is due directly to the pressure and the cutting off of their nutrition by the naevus

cells seems apparent. However, it is not the outside pressure alone, since in numerous gland remnants the nævus cells have evidently invaded the glands and grown within them (see figure), so that the glandular structures had to yield to the pressure of the nævus cells from without and within. Even the small sebaceous glands belonging to the few fine hairs have undergone or are undergoing this process of regressive metamorphosis.

Where the little tumor reaches the bulbar conjunctiva a little lacrimal gland is situated which is also undergoing a similar process of degeneration, which, however, has not progressed quite as far, as here the nævus cells have not yet taken possession of the whole tissue.

Whether the cysts which have been described by others in nævi are explained by this mode of destruction of the glandular tissue, is not quite clear, but seems very probable. (See also my description of An Uncommon Epithelial Tumor of the Bulbar Conjunctiva, probably a Nævus Cysticus, October, 1916, this Journal.)

In this nævus the nævus cells do not seem to have been derived from the epithelium, as in no section (and the whole tumor was sectioned) the nævus cells are in contact with the outer epithelium. The arrangement in this tumor gives the impression that the nævus cells have grown from the deeper connective tissue parts towards the epithelium, as there is everywhere a small amount of connective tissue between the nævus proper and the outer epithelium. Very few of the nævus cells proper contain pigment, the larger amount of chromatophores lies in this small layer of connective tissue.

While the nævi of the conjunctiva I have previously had occasion to describe seemed decidedly to speak for Unna's opinion, according to which the nævus cells are derived from the outer epithelium, the specimen here described seems rather to support Ribbert's view, according to which the nævus cells are of connective tissue origin.

ORBITAL PROTHESIS.*

BY DR. G. VALOIS AND DR. J. ROUVEIX.

Ocular prothesis as it was conceived in the limited conditions before the war corresponds very poorly to the necessities created by the numberless injuries which we have to deal with at present.

Formerly it was sufficient to reconstruct the "façade" of the stump of an eye in place or of one reconstructed by the operative ingenuity of the surgeon. This "façade" very æsthetically covered the surface on which it rested, received its movements and was placed in the same plane as the eye still existing.

Aspect, movements, projection, all this was realized in this manner. Usually a collection of ready made eyes in series sufficient to satisfy the three conditions. Rarely some case demanded the making to measure of an artificial eye, or on a mould. These were mostly people who were so situated that they could demand a more æsthetic appearance according to their fortune.

To-day these rare cases have become the general ones. The collaboration between the prothesist and the surgeon is no longer possible. The prothesis alone must suffice to repair the lamentable destruction which only too often concerns the globe, the annexes and almost always the orbit. The ocular prothesis has become an orbital prothesis.

The "façade" is no longer sufficient; this formerly ocular prothesis has become the veritable prothesis. We shall speak of the principles, the laws, the materials of this latter of which we make use to give our wounded heroes an æsthetic aspect which will permit them to gain their livelihood as before.

Projection, aspect, movement, this is the aim of our efforts. In order to reach it we have at first tried to make a mould of the orbital cavity.

We have quickly abandoned substances fusible at a temperature slightly higher than that of the body. The difference between the degree of fusion and that of solidification leaves too little margin to count on a true mould; the least technical error causes a malformed mould.

We have used the only material admitted by the prothesists: plaster of Paris or rather alabaster, which is well borne by the conjunctival mucous membrane.

*La Clinique Ophtalmique, August, 1916.

Before all, the orbital cavities of which a mould is made must be healthy, that is without conjunctival irritation as shown by chemosis, œdema of the lids or secretion.

It is important to get the whole moulding of the orbital cavity in one step, not only of the surface of the orbit, but also of the transition folds. In one word, the whole piece must come out as one.

To this end it is indispensable to use a tool which we have constructed for this purpose. It consists of a small funnel with a large opening for the admission of the liquid plaster. On the side opposite to this funnel is a convex part reproducing the inner surface of the eyelids. This part is destined to retain the eyelids in the position which they occupied on the eyeball.

The eyelids thus sustained, the liquid plaster easily fills the whole orbital cavity, and, so to speak, takes the place formerly occupied by the absent eyeball.

The mould thus made is very easily counter-moulded; in this counter-mould we have the exact aspect of the empty orbit with its least details.

This mould can, however, not be used in its totality. Sure, it will give us the projection of the eyeball, but while preserving this projection we must select the portions useful to us, especially those which will preserve the greatest number of movements.

Therefore, studying attentively the surfaces of the orbital cavity, we notice that only certain portions of it are moving, others are immovable, others finally are deformed by the influence of movements.

Now only the real labors of the prothesist begin. It is impossible to make fixed rules for this research of the movements which can be utilized, experience alone can guide us. In fact, often enough a band which we at first wanted to remove gives us some movements which the prothesis must make behind it. In other cases, we must seek some mobility in some diverticulum of the conjunctival cul-de-sac. This is a question of the fingers, of experience which it is impossible to formulate in principle; except: use the movements, neutralize the deformities.

When the moulding of the orbital cavity has been done, the final mould can be exactly like it only in the one position in which the cavity has been moulded. The least movement of the fundus of the orbit will suffice to change their relations.

The prothesis must therefore be made in such a manner that

these relations are maintained during the smallest movements even. In this way we have by a normal evolution come to know the inconveniences of rigid moulds and to replace them by hollow ones, which are elastic in the parts resting on the ocular stump. These moulds will hug the conjunctival surface in all its changes produced by whatever movements are still preserved.

On the other hand, as we said above, the old prosthesis covered a stump by a front in the shape of a shell; to-day, in most cases this stump is absent. It is impossible to count on it for sustaining the prosthesis. In consequence the lower conjunctival cul-de-sac must support the weight of our mould, whatever it is; unfortunately it will in no way be steadied in the orbital cavity.

We have tried to overcome this inconvenience and to build a prosthesis which would not only hug the orbital cavity from which it was moulded, but also maintain its position by itself without being at the mercy of the least movement of the head.

The eyeball is normally fastened in its place in the following manner: the muscles of the eye, the capsule of Tenon hold it in front; these insertions are opposed to the fat cushion of the orbit which has a tendency to push the eyeball forward. The opposition of these two forces acting against each other constitutes the best fixation imaginable.

We could only try to reproduce this anatomic condition. In the absence of the muscles and Tenon's capsule we could only think of the eyelids. We had in some manner to replace the fat cushion of the orbit and we did it in the following manner. The anterior portion of the prosthetic eye is made of caoutchouc or vulcanite; this receives the "façade," reproducing the appearance of the eye made of enamel or by any other procedure of painting. This constitutes the interpalpebral portion of the ball; against this rigid surface the opposing force of the lids must act.

The posterior part as well as the lateral ones of the mould are made of soft and elastic caoutchouc. The space between the anterior and posterior walls is empty or rather filled with air.

This apparatus is essentially elastic, pneumatic, and hugs without undue pressure the sinuosities of the orbital cavity, copying its difformities, but transmitting the movements.

Its suppleness helps to maintain an elastic contact between the eyelids and the fundus of the orbital cavity. It will not by its weight, small as it is, fall into the inferior cul-de-sac, nor leave the place assigned to it by the moulding.

The mould is made of an almost living material, elastic caoutchouc, which transmits the least movements of the eyelids or of the fundus of the cavity; it is in continued action. This relation is for us the best warrant that it will remain in place; moreover, its lightness helps to assure its stability.

It is useless to discuss how valuable such conditions are to the projection of the artificial eye and to the utilization of the least movements of the remaining muscles, if there are still any to be spoken of as being at our disposal.

It may, finally, not be useless to add that these moulds do not break easily, on account of the material used in their composition. These advantages are of great importance for the wounded who will wear them, many of whom will resume the hard work of laborers.

These are the results of the first studies which we have been able to make at the studio for ocular prothesis of Royat.

THE CONJUNCTIVAL FLAP IN THE TREATMENT OF GONORRHOEAL OPHTHALMIA.

Mann, of Texarkana (*Tex. State Jour. Med.*, November, 1916), refers to the use of the conjunctival flap in corneal disease and injuries. From a limited experience he is convinced of its merits. If a flap can be secured above or below more conjunctiva is available for conjunctivo-keratoplasty. This procedure in gonorrhoeal ophthalmia was called to Mann's attention by studying a case in which nature had done a conjunctival flap operation. Later an opportunity presented itself for deliberately covering a perforating ulcer in an only eye. Previous to perforation the usual measures had failed; with perforation there occurred a prolapse of iris. As the situation was desperate Mann loosened the conjunctiva and drew it over the ulcer prolapsed iris and all. Nothing was done to the prolapsed iris and the infected ulcer was left as it was. The ulcer healed without incident. The patient can see to walk around and with a contemplated iridectomy it is hoped to give him useful vision as the lower half of the cornea is perfectly clear.

GENERAL MEDICATIONS.*

BY DR. A. DARIER.

The position which mercury occupies in the treatment of eye diseases, even non-syphilitic ones, deserves particular attention.

Empirism and routine have recognized its real efficacy, which it is wrong to deny because it is not always well understood and because it is wrongly explained. Mercurial medication, in fact, in spite of the abuses perpetrated with it, is nevertheless when properly administered one of the most cherished weapons in our therapeutic arsenal.

To-day with the modern pathogenic theories we can form a more exact idea of the therapeutic action of mercurial medication. Its action is topic when we employ it in keratitis in the form of the yellow oxide, or as calomel, etc.; disinfectant in wounds in a solution of sublimate, cyanide, etc.; in general medication it acts often as an antisiphilitic, but in many cases it has a direct or indirect bactericide, microbicide, antiseptic action by provoking a more abundant production of phagocytes and in modifying the blood plasma, by stimulating the genesis of antibodies, of lysines, etc.; and we must attach the greatest importance to these latter valuable properties of mercury.

It is wrong to believe that mercury has always a general debilitating action. In small doses it exerts, on the contrary, a tonic action on the heart, it increases the blood pressure, increases the number of erythrocytes and the body weight. It is this very particular property of mercury in—so to speak—homœopathic doses which explains the good effects of this medication so widely used in the scrophulous eye affections.

But its action is quite different when it is administered in large doses. In that case its action on the heart is undoubtedly weakening; it reduces the blood pressure and diminishes the number of erythrocytes by its powerful hæmolytic action.

During numerous years the mercurial treatment of ocular affections of the most varied kind was the most employed therapeutic measure; in fact, the only one which yielded some results before sodium salicylate, aspirin and some other medicamentous agents were known, including the sera, tuberculin, guaiacol, and yet, in many cases we have come back from the salicylate to mercury but with a little more method and discernment.

*(Extract from *Compendium et répertoire de thérapeutique oculaire générale et spéciale*. Soon to be published.) La Clinique ophtalmologique, August and October, 1916

Quite recently only numerous authors praised with much conviction mercurial inunctions to saturation as the treatment in traumatic ocular infections, which by the way had been known previously, a treatment which we have always employed and always employ against the horrible sympathetic ophthalmia, parallel with the other local or general medications.

In these cases there can be no question of an antisyphilitic action of the mercury; in all probability it is a profound modification of the mixture of the blood which renders the tissues and liquids of the body unfavorable to the development of micro-organisms or toxins or anaphylactins, the supposed causes of sympathetic ophthalmia. This is so true that the same effect can be reached by another antiseptic, almost equal to mercury, namely silver. Collargol or colloid silver in the shape of an ointment in prolonged and repeated inunctions, stops as well as mercurial inunctions the traumatic or postoperative infections. The same effect has sodium salicylate in large doses and, also, arsenobenzol. Paraspecific serotherapy acts almost in the same manner in all such cases.

All these facts may serve to show that mercurial inunctions as well as those of collargol act by changing the mixture of the blood and especially in accelerating the oxydations, and in neutralizing the toxins or in provoking the genesis of antitoxins.

In fact, the experimentors have recently informed us that the metals, gold, silver, iron, sulphur, etc., in a colloidal state act like oxydo-reducing agents, provoking a rapid and complete oxydation of the toxin (tetanus, diphtheria); the action of these metals on phagocytosis is also being studied; and this is a very important point of pharmacodynamics, for it shows us forcibly that the mercury does not act only as an antisyphilitic bacteriotrope and specific.

There is another mode in which mercury acts which was acknowledged by the ancients and which is certainly also of interest. To the mercurials was attributed an alterant, resolving, dissolving, melting action on the most different exudations. In fact, it is known that all mercurial solutions have a powerful hæmolytic effect. To-day we possess the proof of this dissolving action by clinical observation and by experimentation. In fact can we not see the transmission of dissolved osseous lime substance being arrested by the renal filtre? Experiments on animals have shown that the nephritis of acute mercurial poisoning is due to an irritation of the excretory elements by lime salts transported by the blood.

The methods of employing mercury are as numerous as they are varied.

Mercurial inunctions have outlived all other mercurial medication, so diverse and peculiar, employed by the ancients; they constitute, indeed, the most efficacious and most rapid method in order to produce mercurial saturation. They are, therefore, indicated in the cases in which it is urgent to obtain with the least delay an intense mercurialization of the whole organism, in certain cases of iritis, iridocyclitis, iridochoroiditis accompanied by violent inflammatory symptoms, whether they are due to syphilis or to a traumatic infection or to sympathetic complications.

Aside from these urgent cases, the principal indication for inunctions is given by certain circumstances which render it impossible to give subcutaneous or intravenous injections, whether the patient refuses them or for other reasons. However, in order to act more quickly the two methods may be combined, local mercurial inunctions and intravenous injections; sometimes we should not hesitate even to make at the same time subconjunctival injections when these are indicated by the gravity of the local symptoms and when the general administration of mercurials has produced only an insufficient improvement, but sufficiently pronounced to show that mercury exerts a beneficial act. Under such conditions one or two local injections may be followed by a rapid cure; they form the whip lashing given at an opportune time in order to provoke a supreme effort of the *vis medicatrix naturæ*.

As prompt and efficacious as is the action of mercurial inunctions when made under the direction of the physician himself, as irregular and illusory is their effect when confided to the patients alone, who always have a certain repugnance to such a malproper and incommoding method of treatment.

In any case we can recommend to the patients to use for these inunctions a mercurial ointment made with lanoline or vasogen, which deteriorate less and are more easily absorbed than the neopolitan ointment. It is best to prescribe one inunction per day of 4 grammes for an adult and of 2 grammes for a child. (The gelatinous ampules of Chaumel contain 4 grammes of mercury with lanoline, a very carefully made and commendable preparation.)

The formula for mercury with lanoline ointment may be given thus: Pure (sterilized) mercury 100 parts, mercurial ointment (double strength) 15 parts, pure lanoline 100 parts.

The addition of a few grammes of mercurial ointment helps to a more intimate mixture of the mercury with lanoline.

In the evening before going to bed, the patient having selected the place where the inunction is to be made, washes it with some cotton dipped in alcohol or, better yet, with some tincture of soap, then rubbing with the palm of his hand he spreads out the ointment and rubs it until it has—so to speak—perfectly disappeared in the skin. As much as possible the patient should perform this friction. Then the rubbed part is covered with thin paper and then with some cotton which remains in place all night.

The next morning the place is washed with tincture of soap and every trace of the staining ointment removed with lookwarm water, and in the evening another inunction is made in the same manner on another place of the body. Soon a general effect will be obtained. In case of urgency the inunctions may even be made morning and evening.

In certain subacute or chronic ocular affections the inunctions may be made on the forehead only or around the orbit, and their effect may be enhanced by hot applications, cataplasms or hot cotton. When these applications are made during the night they have the advantage of producing a local hyperæmia which is favorable to the absorption of the mercury. These hydrargyricized cataplasms form a good treatment in keratitis, iritis, etc.

The manner in which the mercury is absorbed by the skin is often discussed. Some state that it is absorbed by the pores of the skin glands in the form of a gas, others pretend that the mercurial assimilation occurs through the mercurial emanations which are inhaled. Kromeyer, also, has praised the method of inhalation in the treatment of syphilis. This method is employed by means of a light mask of mousline impregnated with 8 grammes of pure mercury in very fine division. The mask is worn during the night and causes no inconvenience. The author has found that the amount of mercury absorbed is sufficiently large to influence rapidly the syphilitic manifestations, even more rapidly than by injections. Each mask lasts about 10 days.

The principal advantage is that the treatment can easily and immediately be interrupted as soon as signs of intolerance appear.

Formerly the patients were put for several days into a dark room where they lived in an atmosphere saturated with mercurial vapors. They came out of this with a stomatitis and intense salivation, their teeth shaking in the alveoli. Those who

believe only in the absorption of mercury by respiration recommend the application of the ointment on the chest and order the patients to wear the same underclothes for several days. The continued wearing of a woolen cloth saturated with mercury in such a manner that the emanations are inhaled day and night has also been praised. Finally, Frankenstein (*Deutsche med. Wochenschr.*, 1915) came back to vapors produced by an electric heater which vaporizes the mercury in a current of oxygen and air of a temperature of 325 degrees; the air thus saturated with mercury is projected into a closed chamber in which the patient remains.

However, to-day a strict inunction cure is really perfectly sufficient.

We may further add hydrargyric suppositories composed of cacao butter and strong blue ointment. The effect is nearly identical with that of inunctions in patients whose rectum stands this medication well.

Subcutaneous and intramuscular injections.—Many different soluble and insoluble mercurial salts have been used for hypodermic injections.

The use of *insoluble salts* for injection must be, if not altogether rejected, at least prescribed with great precautions and it must be begun with very small doses to feel the way. In fact, there are some idiosyncrasic incompatibilities with which we have to count at the risk of grave intoxication or sometimes even of death. Numerous cases of death after the injection of insoluble mercuric salts have been reported; also, some cases of pulmonary embolism and of cerebral embolism. Large injections must never be made unless the tolerance of the patient has been proven by long continued progressive injections of soluble salts. Then only injections of calomel or gray oil may, when given at most once a week, render the greatest service. According to Gaucher, gray oil is especially apt to cause the special form of mercurial stomatitis which may be characterized thus (its evolution may be schematically divided into three periods):

It begins like an ordinary stomatitis of medium intensity, that is, the tongue is swollen and has a pultaceous covering. At this period the stomatitis is general, diffuse and of medium gravity. It must be noted that the beginning of the intoxication before the stomatitis appears is sometimes announced by a rebellious enteritis with diarrhœic mucoid stools, a veritable alarming enteritis.

The important complications which occasionally lead to death are, first, an œdematous infiltration of the buccal cavity which may end in œdema of the glottis and asphyxia; second, fudroyant hæmorrhages, resulting from gangrenous ulceration of the blood vessels; finally, a generalized infection and intoxication by the absorption of the foul gangrenous products.

In order to prevent the stomatitis and the other affections, Querrat has advised the following precautions:

(1) Examine the urine. If there is albumen reject the use of any insoluble mercurial salt.

(2) Insist on a rigorous hygiene of the mouth of the patient (no tobacco, no alcohol, no highly spiced dishes); gargling and mouth baths with a solution of chlorate of potassium 25 to 1000, brushing of the teeth with soap and a soft brush.

(3) Make sure of the condition of the gums before each injection. Stop the injections of insoluble salts as soon as the gums appear swollen; also, if a nodule remains at the site of the former injection.

(4) Use the best technique in making the injection. Use a needle 6 centimeters long, thrust it into the muscle and do not make the injection before being certain that no blood comes out of the needle.

(5) Prevent the formation of a nodule, the direct cause of the stomatitis, because it sequesters the mercury (by making the injection into the muscle itself, in not allowing the mercury to spread along the path of the needle while it is being withdrawn).

If a stomatitis comes on it must from the beginning be energetically attacked by the following means:

(1) Suspension of all mercurial medication whatever.

(2) Sustain the patient's strength by nutrition (milk, if there is albumen), quinine, coffee, etc.

(3) Tone up the heart by injection of caffeine.

(4) Make every hour a buccal irrigation with a soft canula alternately with the chlorate of potassium solution of 25 in 1000, 1 per cent. phenolized water, neutralized oxygenized water, pure or mixed with one quarter of boiled water.

(5) Paint the ulcers with tincture of iodine, chromic acid or neosalvarsan, protect the diseased parts from saliva, touch with 1 part neosalvarsan in 10 of glycerin (Gerber).

(6) Inject sea water or colloidal platinum in order to fight the supervening infections and intoxications of the organism.

(7) If there is a nodule and the stomatitis does not change, cut

it out after radiographic examination in order to make sure that you have to deal really with mercury and not with a small hæmatoma. The elimination of the mercury may further be favorably influenced by sulphur and potassium iodide.

Sulphur baths or the internal exhibition of colloidal sulphur will permit the strongest doses of mercury and add to their efficacy.

Here are some formulæ for insoluble injections which may be used with all confidence, if they have been prepared antiseptically:

- (1) Calomel, 0.50.
Camphor, 1.00
Guaiacol, 1.00
Sterilized olive oil, 10 grammes.

Every dose of 1 cc. contains 5 centigrammes of calomel. The camphor and the guaiacol render the injection almost painless.

- (2) Purified metallic mercury, 40 grammes
Sterilized lanoline, 25 grammes
Oil of vaseline, q.s. ad 100 cc.

Every syringe-ful of 1 cc. contains 0.40 volumes of metallic mercury.

The following precautions are necessary for the injections of insoluble salts:

It is, of course, absolutely necessary that the preparation to be injected must be perfectly aseptic, as well as the syringe and, above all, the needle.

This latter must be made of platinum-iridium, so that it can be well flamed before and after use; it must be at least 5 mm. long and its caliber must be large enough to let the injection fluid pass easily.

The location of choice for the injection should be the fleshiest part of the gluteal region, avoiding, however, the lowest portions which when sitting down bear the weight of the body. The skin must always be washed with a little alcohol, ether or chloroform before injection; the latter of these render the stab a little less painful.

The needle should be thrust in perpendicularly to the surface and well into the muscular tissue. The passage of the needle through the muscular fascia is easily felt, and before making the injection it is wise to ascertain whether the point of the needle has not entered a vein. In order to do this a slight aspiration is made by withdrawing the piston of the syringe (which should

never be so completely filled that there is not a little play left for the piston); if no blood appears in the syringe the injection may be completed, but always slowly, carefully and prudently, pushing the piston to the end before withdrawing the needle.

The injections of calomel and gray oil made with the solutions prepared according to the formulæ given above, are called painless; yet quite often the patients complain of much suffering, so do the individual sensibilities differ. Sometimes the injection causes a pretty strong induration and even a deep abscess, but the therapeutic action from this is often more marked (what Fouche has recommended, a fixation abscess, is formed), then the injections must be stopped.

In malignant syphilis of the eye and the nervous system the injection of calomel is one of the most energetic mercurial treatments; but, as we have said above, before using massive injections of insoluble salts it is wise to try the patient's sensibility by several injections of sublimate, cyanide of mercury, enesol, etc.

The injections of salicylate of mercury are midway between the injections of soluble and insoluble salts. They are quite painful, but they have the advantage of permitting large injections, of 5 and even 10 centigrammes.

In order to avoid the cumulative action of the injected masses, one must never make more than 6 injections in a treatment of 6 weeks.

Injection of soluble salts.—Grave accidents are never observed with injections of soluble salts, and that is easily understood when the patient is seen every one or two days; one is always there to interrupt the treatment as soon as one sees that it is badly borne.

The first signs of intoxication shown by the patient under treatment by injections of soluble mercurial salts are abdominal pains, colic, cramps of the stomach, sometimes bloody diarrhœa, rarely vomiting. The first cases of intolerance observed showed themselves after the hypodermic injection of one centigram of bichloride of mercury in gouty or arteriosclerotic patients, all gave the same symptoms of colics and bloody diarrhœa. Since then attention has been drawn to these facts and this individual intolerance to mercury has been often observed; it is probable that this idiosyncrasy is due to an insufficiency of the renal function.

Young subjects in their youthful strength and health may

show this intolerance to mercury in whatever form it is administered. What would have happened in these cases if instead of an ordinary dose of a soluble mercurial salt the patient had received a massive dose of calomel, gray oil or yellow oxide? Death would have been the probable result.

We must add that recently experience has shown that this intolerance is often only relative and that it is easy to get the patient finally to bear pretty large quantities of mercury by giving him very small and only gradually growing doses.

It is true these cases of intolerance are rare, but it is necessary to know them to be on guard and to distrust the councils of those who say that we can inject up to 5 centigrammes of sublimate at one time.

In certain very grave cases we may go progressively up to 2 centigrammes or 3 centigrammes of cyanide of mercury, but this treatment can rarely be kept up long without causing colics and diarrhoea which force us to diminish the doses.

It is well to note that in almost all cases the toxic effect has not damaged the result of the treatment; on the contrary, a more rapid and more manifest improvement of the ocular affection has often followed such an involuntary intestinal revulsion.

Many soluble salts have been used; they are almost all of the same value.

The injections of biniodide of mercury have, also, given good results, but they are neither less painful nor more active than the aqueous solution of the cyanide of mercury, and they are more difficult to make aseptic. The aqueous solutions of biniodide of mercury with iodide of sodium and those of bibromide of mercury are to-day praised as very little painful.

The author has in the last 20 years given the preference to cyanide of mercury (Hy Cn 2) on account of its solubility, its quick absorption and the little pain caused by its injection. It has the further advantage of not precipitating cocain as the bichloride does. This permits us to make the injections immediately painless by adding some cocain or acocin to the solution.

The following formula is very well borne in intramuscular injections in the dose of 1 to 2 ccm. every second day:

Cyanide of mercury, 1 gr.

Cocain hydrochlor., 0.50 gr.

Sterilized distilled water, 100 gr.

Oxycyanide of mercury causes most often phenomena of intolerance and intoxication. The simple cyanide is more stable, more soluble and the easiest had in all pharmacies.

For injections we use a 1 per cent. solution and inject progressively up to 1 centigramme every day or up to 0.02 every other day. Intense and very rapid effects have been obtained, but sometimes after a few days signs of intolerance show themselves. The urine must always be examined before the treatment.

Before each injection the gums must be examined and the patient be questioned regarding the state of his stomach and intestines. If he has the least colic (this may be called the limiting reaction of the therapeutic dose) the increase in the dose must be made more slowly. The intestinal symptoms are instantly cured by an injection of morphine or by a teaspoonful of paregoric in coffee. The patient must be advised of this.

The *intravenous injections* of soluble mercurial salts are the last method of a rational therapeutic use of mercury; and after having been sceptical concerning these for a long time the author has for the last 25 years been their staunch advocate. At present he uses intravenous injections almost exclusively in the treatment of syphilitic eye affections and has made thousands of them without any grave accident.

Evidently, this is a delicate procedure, perhaps difficult in inexperienced hands, but practiced by a physician educated in the principles of antisepsis and clinical experimentation it presents advantages of the first order: absence of all pain and every local lesion (infiltrations, nodosities, etc.), rapid, certain and precise action, without later secondary effects, as is at times the case with intramuscular injections.

The solution must be clear and aseptic, contain no cocaine or other analgesic which might act too strongly on the heart and the nervous centres. Here is the solution to be recommended and the innocuousness and beneficent action of which has been shown by experience:

Cyanide of mercury, 0.33
Sodium chloride, 0.08
Sterilized distilled water, 100 grammes
Filter carefully and sterilize.

Inject 2 or 3 cc. into a vein in the fold of the elbow, taking care to make the injection very slowly. The author, as stated, has made thousands of such intravenous injections without the least complication, except now and then a slight swelling when a small quantity of the fluid got outside of the vein. The entrance of big air bubbles into the veins of the arm is without

danger. It has happened that involuntarily a whole syringe of air was injected without the least inconvenience, even when pure oxygen was injected into the veins.

Very nervous patients may at the first time show a certain apprehension, especially if the injection is made too quickly, and if they see that the physician himself does not feel sure; but this small and very rare inconvenience is fully compensated by the great advantages of the intravenous injections.

Intravenous injections are as easy to make as subcutaneous ones. Patients in whom it is difficult to find the veins are rare; in such a case we must per force make subcutaneous or intramuscular injections.

In order to make the vein plainly visible two turns of a bandage are tightly made around the upper part of the biceps, and while the venous stasis develops the place for the injection is washed with a wad of cotton soaked in chloroform, alcohol or sublimate; then the needle (fine and of platinum iridium) having been flamed the patient is seated in front of the physician, the arm reposing on the knee of the operator, who fixing the vein with the index finger or the thumb of the left hand pushes carefully with the right hand the needle through the skin into the vein in the direction of the venous current, that is, from below upward. Before injecting it is best to aspire gently in order to see whether blood enters the syringe; in order to do this the syringe must not be absolutely filled, so as to leave some play for the piston. If the blood shows one is certain not to have made a false passage, then the ligature around the arm is removed by undoing the knot with the left hand and with the right hand the fluid is slowly (4 or 5 seconds) pushed into the vein. The patient notices sometimes a cool sensation in the mouth and sometimes a peculiar taste.

The needle should be withdrawn gently. A slight compress is made with a wad of cotton on the place of the puncture, then with a drop of collodion the imperceptible opening is hermetically sealed. After a certain number of injections it is often necessary to change the vein or to make hypodermic injections in order to let the bloodvessels rest, which might become clogged.

The injections must always be alternated between the two arms so as not to fatigue the veins, which naturally after a great many punctures will sclerose and finally become so tender and narrow that it is difficult to make a further one. This is the principal objection which can be raised to intravenous injections, yet we can always fall back on hypodermic injections when the

vein does not permit the continuation of the treatment. The intravenous way can be used again when after several months rest the veins have again become permeable.

As regards complications, they are excessively rare and are hardly known outside of those due to a badly made injection in which the fluid gets outside of the vein. It is then a hypodermic injection, but in a very vascular part of the body and rich in nerves and consequently very sensitive. In order to avoid this a little experience is necessary, for it is easily seen when the fluid does not enter the vein and flows under the skin by the hard and cold swelling which results. One must not continue and, better yet, withdraw the needle and make the injection on the other arm.

A phlebitis with general infection has never been observed; it is hardly possible when the needle has been flamed. The author has never in 25 years observed any grave accident; he has heard, however, of an injection of cocain made by mistake which produced a prolonged but not lethal collapse. But such errors may happen as well with hypodermic injections. Of course, if by mistake a highly toxic solution is injected into a vein (cocain, atropin, cyanide or sublimate 10 per cent.) a great responsibility is incurred; neither must an injection be made into an artery, because this might lead to a vascular obstruction with all its consequences.

The author has never seen any more serious accidents with intravenous than with hypodermic injections. Of course both of these methods and especially the latter demand a physician worthy of this name. Modern medicine brings with it great responsibilities and the physician must prove that he has acquired deep knowledge at the bedside.

In the different modes of the application of serum therapy the comparative action of subcutaneous and intravenous injections and the absorption by the intestinal route can be well studied. If in an acute plastic iritis the serum of Roux is injected into a vein the analgesic effect is felt in less than one hour, if it is injected under the skin the effect shows only after 4 to 6 hours, if given internally only after 6 to 8 hours.

Here is the opinion of Baccelli (the promotor of the intravenous injections of whom Virchow said: What Lister has done for the surface of the body, Baccelli has done for the blood):

"When injected in the veins the medicaments get immediately into contact with the virus which infects the blood and are with great rapidity carried to all the organs and into all the tissues.

In syphilis the action of the sublimate on the walls of the blood-vessels, the seat of predilection of luetic changes, is extremely rapid when intravenous injections are made. In obliterating endocarditis, especially these injections act so promptly and so powerfully that they reopen the bloodvessels immediately.

These considerations show the advantages of the intravenous injections, the technique of which is of the simplest. A little attention and care on the part of the physician suffice to avoid any accident.

With the spreading of this method the intravenous injections have continually increased in numbers, not only as regards sublimate, but all the other remedies.

The physician can measure with mathematical exactness the medicamentous dose which enters into action. The solutions enter the circulation at once and exert their influence in an astonishingly rapid manner."

Whether we use hypodermic or intravenous injections of cyanide of mercury, we must make sure before every new injection whether or not the patient has since the last injection felt colicky pains or had diarrhoea. In this case the dose must be diminished or the injections be made less frequently.

It is best after a first series of from 30 to 40 injections to give a month's rest before a second and even a third series is given. Often in certain slow and insidious affections as parenchymatous keratitis, iridochoroiditis and choroiditis we may be forced to make more than 200 or 300 injections in the course of 2 or 3 years.

In order that the organism is not too rapidly accustomed to the mendicamentous agents in these cases it is well to change the mode of application (inunctions, hypodermic or intravenous injections, local injections, subconjunctival injections) or to vary the salts employed. Such an alternating medication will always be valuable.

Thus we may make a first series of 30 to 40 intravenous injections of 0.01 of cyanide of mercury, then, after one month of rest, a new series of biniodide of mercury (0.01 to 0.03 progressively). Finally if a third series is considered necessary and if we have to deal with one of those tertiary forms with rebellious skin complications or deep osseous alterations, we best employ another salt of mercury which is interesting on account of its composition. This is the salicylarsenate of mercury, which has been given the name of enesol. This salt is very soluble, very quickly eliminated by the urine and 78 times less toxic than

the biniodide. It contains 38 per cent. of mercury. One centigramme equals 0.0087 of biniodide of mercury.

Enesol is used in almost painless solutions of 3 per cent. A cubic centimeter contains 0.0115 of metallic mercury which corresponds to 0.026 of biniodide.

A combination of mercury and arsenic can have very good and better effects than arsenic alone, the action of which on anæmic patients must be counted with.

We can without fear make intravenous injections of 2 and then of 3 cc. of enesol with very favorable therapeutic effects; we can also make subconjunctival injections of 1/1000, causing very much less pain than the cyanide.

In obstinate syphilis it is best to alternate the mercury with arseniates, salvarsan, galy, etc.

The administration of mercury by *mouth*, although the least trustworthy and the most uncertain, cannot be altogether put aside. This would deprive the patients of a sometimes very precious aid. It may be of service as adjuvant to the treatment by injections or inunctions. The liquor of Van Swieten in the dose of one to two teaspoonfuls per diem will be of the greatest service in children who do not stand injections, which, however, is rare. Sublimate pills, calomel in refracted doses, have their undeniable therapeutic results; the mercuric iodide solutions and the syrup of Gibert especially have many supporters and that for good reason.

To resume, mercurial medication in luetic ocular affections, when a prompt and complete result should be obtained, should consist above all in either mercurial inunctions made under the physician's guidance, or hypodermic injections, or better, intravenous injections which permit of probing the patient's individual sensibility and avoiding grave intoxications. The field having thus been well explored we may, if there are particular indications, have recourse to massive insoluble injections which when made once a week give the patient a greater liberty.

Finally, when all these remedies have not brought a sufficient improvement some local applications may be of value, as subconjunctival injections of cyanide of mercury or enesol.

(To be continued.)

MEDICAL SOCIETIES.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OPHTHALMOLOGY.

Mr. William Lang, F.R.C.S., President.

On November 1st the first meeting of the session was held.

In his inaugural address, the President advocated the appointment of a small committee to initiate and organize research, with perhaps a bureau for collecting details of rare cases. In this way a quantity of valuable material would be available for research scholars, or for a committee appointed to make use of it. Further, a card-index system for recording all literature bearing on the science of ophthalmology in the United Kingdom would be very valuable. At present pathological confirmation of the findings of clinical observation on an adequate scale was lacking, especially in regard to septic foci as the cause of many eye diseases. With the society's excellent laboratory, it only needed a system of subsidized workers. This could well be the occasion for joining with other bodies in a crusade to instruct the nation in the cultivation of right habits, notably in regard to clean mouths. The same purpose ran through all this effort: to decrease by British effort the power of every disease.

Mr. G. Winfield Roll showed a case of congenital pigmentation of the optic disc, in a subject of glycosuria. The right eye was affected with retinitis: the vessels in the remainder of the fundus were normal.

Mr. Leslie Paton exhibited a case of pigmented plaque of the cornea, of obscure nature, though he inclined to the view that it was a melanotic sarcoma. There was a peculiar separation of the fibres of the iris. Mr. Mayou thought it was the appearance which would be produced by an injury, but there was no history here of trauma. The President thought it was an anterior synechia, and recommended inspection with a stereoscopic apparatus.

Dr. Frederick E. Batten showed a child with pigmented degeneration of the retina, associated with epileptic fits. The sight had failed somewhat rapidly during the past year, and a central scotoma in both eyes had been demonstrated, somewhat to the temporal side. There was also optic atrophy, and some pigmentary disturbance at or near the macula. Physical examination of the nervous system was negative. The father was syphilitic,

but this patient showed no trace of that disease. The case was discussed by Mr. Paton, Mr. Rayner D. Batten, Captain Ormond, Mr. Mayou, Mr. Parsons, and the President.

Mr. N. B. B. Fleming showed a case of retinitis circinata, with changes in blood vessels, and Mr. A. C. Hudson exhibited a new small speculum.

Lieut.-Colonel and Mrs. R. H. Elliot submitted a contribution on the photography of macroscopic eye specimens, its object being to help those who desired to photograph macroscopic eye specimens. The authors regarded the following points as of importance: (1) The photograph must be taken in water, without the intervention of glass or other similar material. (2) The source of light must be good and even. (3) The camera must be placed immediately above the object, to avoid reflexes. (4) the object of the photograph must be so placed that its image will occupy the center of the plate, and a method of adjustment should be available to secure this end with the least inconvenience. (5) A simple arrangement is necessary to fix the eye in position during the whole exposure. (6) To save unnecessary re-touching, the object should be photographed lying on a dark and uniform surface, to obviate the background disturbing the attention of those viewing the picture. (7) Care should be exercised in the choice of a camera, and exposure-periods must be carefully studied. For the making of lantern slides, the contact method is recommended, and the authors directed attention to the following points: correct exposure, the preparation of plates for exposure, development and fixation of the slides, the drying of the plate, the reduction and intensification of slides, and the varnishing of them.

Dr. Frank E. Taylor and Mr. Norman B. B. Fleming contributed a paper on a case of bilateral glioma of the retina with multiple metastases. The patient was a female child aet. 3 years, in whom an abnormality was noticed in the left eye 18 months previously. On admission, there was a fungating growth protruding between the lids of the left eye, keeping them separate. The mass was bathed with a thin semi-purulent discharge. The right eye was much enlarged, and apparently proptosed, the iris fully dilated and stretched into a thin band at the limbus, the lens being in contact with the posterior aspect of the cornea. The growth was lemon color. No reflex was obtainable ophthalmoscopically. Mr. Elmore Brewerton (who had allowed him to record the case) operated at once, performing exenteration of the orbit, with partial removal of the lids, afterwards sutur-

ing the wound. The right eye was very freely excised. The optic nerve was found to be involved, being surrounded by growth for half-an-inch behind the eye. A fortnight after her discharge, there was a recurrence, half the size of a tennis ball, from which the patient died. She had shown little evidence of pain. Microscopically, the growths were found to be composed of closely-packed small round cells, with large deeply-stained nuclei. A few spindle cells were also present. The body was much emaciated, and the metastases were extensively distributed. The author discussed the subject from a general standpoint.

Mr. Arnold Lawson read notes of a case of recurrent glioma of the retina. The patient was a boy, aet. $3\frac{1}{2}$ years, and the gliomatous eye was removed. The growth had almost perforated the globe. Mr. R. A. Greeves found a large scleral staphyloma at the front, and it was infiltrated with glioma cells, while masses of growth could be traced along the sheath to the foramen. After remaining well six months, there was a recurrence in the orbital cellular tissues, and evisceration was carried out at the hospital. There was a further recurrence, and 90 mg. of radium were applied $4\frac{1}{2}$ hours. Free sloughing followed, and the child was kept in hospital $6\frac{1}{2}$ weeks, at the end of which time there seemed to be no sign of growth. Three months later, however, the patient was re-admitted on account of a fluctuating swelling. It yielded pus, at the bottom of which was suspicious pultaceous material. Investigation revealed an extensive recurrence, beyond the reach of either further operation or radium. The child seemed to have a remarkable absence of pain, and seemed fairly comfortable, except towards the end. The papers of Mr. Fleming and Mr. Lawson were discussed by Mr. W. C. Rockcliffe, Mr. Brewerton, Mr. Parsons, Mr. Holmes Spicer, Lieut.-Colonel Elliot, and Mr. Treacher Collins, the last named calling attention to the different methods of the spread of glioma and sarcoma of the orbit. One began in the neural epiblast, and the other in the mesoblastic tissue. Sarcoma of the choroid generally spread by metastasis, whereas, gliomatous growths spread by continuity, and death occurred from local recurrences, as was shown in a number of cases traced by Mr. Lawford and himself. Lieut.-Colonel Elliot agreed with Mr. Brewerton's operative procedures, speaking from his experience of a number of such cases in India.

ABSTRACTS FROM MEDICAL LITERATURE.

By W. F. HARDY, M.D.,

ST. LOUIS, MO.

COMPLETE EXTERIOR OPHTHALMOPLÉGIA FOLLOWING AN ATTACK OF SEVERE COUGHING.

De Schweinitz and Spiller (*Jour. of Nervous and Mental Diseases*, June, 1916) report a case of complete external ophthalmoplegia occurring in a girl of 4 years, following a severe attack of coughing lasting all of one night and day. The child was normal except for a severe cold. There was no evidence of any infectious disease, no fever, no hebetude. At the cessation of the coughing the eye complications were observed. Accurate recording of acuteness of vision could not be done. Ophthalmoscopic examination negative. Pupils responded, but slowly. Fields were evidently normal. The eyes could not move the slightest laterally or upward. Downward rotation of 1 mm. was noted. The ciliary muscle function was intact. After six days of KI slight movement was seen in the left internus. A week later a marked convergent strabismus was seen. Downward motion had increased but upward and lateral movement was still absent. Nine days later a sore throat developed, thought to be diphtheria, and was treated with antitoxin. Ocular movements gradually improved until they were quite normal. Hæmorrhage in the corpora quadrigemina, the result of coughing, should be regarded as a possible ætiological factor in the palsy. Congenital syphilis must be considered, but no stigmata of this disease were present. The implication of the sixth nerves may be explained by the lesion affecting the posterior longitudinal bundles. The escape of the inner muscles of the eyes suggests a lesion of the oculomotor nuclei. The manner of return of function also suggests nuclear lesion. The case is of interest because the lesion was bilateral. In discussion Dr. J. Hendrie Lloyd offered an ingenious explanation. He thought the bilaterality suggested a lesion of the third, fourth and sixth nerves, as they run through the cavernous sinus. The lining membrane of the sinus lies on the inner side of each nerve. The impact of the column of blood if subjected to great pressure might hit or squeeze these nerve trunks. The power that can be exerted by a column of fluid in a closed vessel is a well known principle of hydraulics. In this case the cough-

ing attacks caused a congestion of blood in the cavernous sinus and when violent the nerves were squeezed between the column of blood on the inside and the bony wall on the outside. Dr. Spiller did not think this a sufficient explanation as the ophthalmic division of the fifth nerve was not affected on either side. On the same grounds Dr. De Schweinitz doubted the applicability of Lloyd's theory.

CIRCULAR PLASTIC OF EYELID IN CICATRICAL ECTROPION.

Snydacker (*Ill. Med. Jour.*, September, 1916) has found the ordinary operations for cicatricial ectropion unsatisfactory. He has devised a method which has given him satisfaction in a number of cases. In most operations the pull of the shrinking tissue is away from the eyeball, consequently flaps must be made redundant. It is difficult to nicely approximate a redundant flap. Snydacker thinks there is little danger of overcorrecting by his method. The chief objection to the operation is that it destroys the outer angle of the eye, though, as the author states, in a severe case there is a destruction of the outer angle anyway. It is best to give the technique in the author's own words: "Assuming ectropion to be in the lower lid, incision beginning just within outer angle one-half centimeter below lid border and parallel with it; adhesion carefully dissected out. With a keratome that part of upper lid about 2 or 3 mm. above outer angle split into two layers, skin being loosened back as far as orbital fold, outer angle included; loosened skin at outer angle of upper lid forms the pedicle of the flap; tongue of the flap is formed by two parallel incisions, semicircular in shape, parallel as much as possible to lower lid border. The flap is continuous in shape and contour with skin of upper lid; as much as possible where the scar tissue which is causing the ectropion extends beyond outer angle of lid, this must, of course, be included in the flap. I have never, however, experienced any trouble from this fact. The hair bulbs of the eyelashes at outer portion of upper lid are destroyed by cutting off with small curved scissors. The defect in lower lid is put on stretch by suturing edges of two lids together. The semi-circular flap without distortion of pedicle is easily laid into defect and sutured into place. If an especially nice and snug approximation is desired, we can pass a

double armed suture through the conjunctival surface, each needle passing out through the outer skin surface of the flap and is tied over small gauze roll, pressing the skin snugly against the underlying surface. The lids are kept sutured together, if possible, for several weeks." The operation attempts to follow the lines of Nature; the flap follows the lines of the orbicularis. What shrinkage takes place pulls the everted lid towards the eyeball. The defect made where the graft is taken can be covered in by undermining and approximation or by Thiersch graft.

THE MEDICAL SIDE OF GLAUCOMA.

Arnold Knapp (*Ohio State Med. Jour.*, October, 1916) is of the opinion that there is an underlying general cause for glaucoma, but the connection is as yet vague. He discusses the views held by various writers relative to the rôle of blood pressure in the production of glaucoma. Some have contended from their observations that the glaucomatous patient has increased vascular tension. Others take an opposite stand and state that they have seen no attacks attributable to increased blood pressure. The exhaustion and heart failure which follow over-exertion, mental depression and weakening disease are frequently associated with glaucomatous attacks. Increased blood pressure can hardly be regarded as an essential factor in glaucoma. Knapp has found arteriosclerotic changes in a considerable proportion of cases of acute and subacute glaucoma. He was struck by the frequent and very marked changes found in the acute glaucomas after the attacks were past. Other factors having a possible bearing are nephritis and nasal empyema. Knapp was unable to substantiate the results claimed by Sluder in causing a diminution of ocular tension by anæsthetizing the spheno-palatine ganglion with cocain. There is no question but that vasomotor irritability, migraine, affections of the fifth nerve, etc., are symptoms that frequently affect glaucoma patients. Yet their exact nature or mode of so doing is not known. The vasomotor fibers are a part of the sympathetic system which in turn is closely related to the ductless glands. Adrenalin is said to dilate the pupil and after subconjunctival injections of novocain and adrenalin dilatation occurs. Knapp cites a case of his in a patient of 27 years, with glaucoma and hyperthyroidism. The forms of glaucoma described in his paper are classified and

divided into two groups: circulatory and nervous. The circulatory group is characterized by congestive attacks, by retinal vascular changes, by local changes in the eye which favor increased tension, such as small eyeball, age of patient, etc., and the nervous variety which shows dysglandular disturbances, no arteriosclerosis, and affecting any type of eye, myopic as well as hyperopic. The treatment of the first group is operative and hygienic; in the second group operation is indicated in some; efforts at general treatment must await a better knowledge of dysglandular affections.

A STUDY OF HÆMORRHAGE INTO THE ANTERIOR CHAMBER SUBSEQUENT TO OPERATIONS FOR HARD CATARACT.

Wheeler, of New York (*Trans. Am. Op. Soc.*, 1916) notes how little information there is in reference to post-operative hæmorrhage in cataract cases. A review of the literature is given together with a detailed report of 2,123 operations for hard cataract performed at the New York Eye and Ear Infirmary during a period of ten years. Herman Knapp is credited with having given us the most by far in the way of detailed reports on the subject of after-hæmorrhage in cataract extractions. Uthoff is quoted as saying that the results in cataract operations are as good in diabetics as in non-diabetics. Worth found that hæmorrhage into the anterior chamber occurred almost exactly one hundred and twenty hours after operation, and that the accident was peculiar to the cataract extraction with a conjunctival flap. Arnold Knapp reported 100 consecutive extractions in the capsule in which there was but one case of hyphæma. Two reports have been made (H. Becker, B. J. Baldwin) of hæmorrhage from the iris following operation so severe as to threaten life. The influence of age, diabetes and albuminuria is discussed. From the analysis of this series of 2,123 operations, the following conclusions were drawn. (1) Hæmorrhage into the anterior chamber following operation for hard cataract occurs in about 4.57 per cent. of the cases. (2) Hæmorrhages are more liable to occur in middle aged patients than in either the young or old. (3) It may occur from one to twenty-eight days after operation, and may take place once or a number of times in the same eye. (4) Diabetes especially predisposes to post-operative hæmorrhage, and the amount of sugar appears to have little influence

on the likelihood of this event. (5) Albuminuria predisposes to hæmorrhage, but less markedly than glycosuria. (6) In the different methods of operation there is greatest liability to post-operative hæmorrhage in "extraction with iridectomy." There is less liability to hæmorrhage in "simple extraction." There is still less in "extraction after iridectomy," and least of all in "preliminary iridectomy."

EXPERIENCE WITH THE TUCKING OPERATION FOR STRABISMUS.

Robin, of New Orleans (*Texas State Jour. of Med.*, November, 1916), gives his views regarding the tucking operation for strabismus. He evolved a method 15 years ago following the introduction of Clark's tucking hook. A congenital lack of equilibrium of the extrinsic ocular elements is assumed as the essential element in producing squint. Ametropia and defective fusion power are but contributing factors. A latent and manifest squint differ but in degree. Robin has high regard for Stevens tropometer as a guide in the selection of the muscle to be operated upon. A muscle imbalance may be corrected by (1) moving back the point of insertion of the overstrong muscle by tenotomy, or (2) by moving forward the point of insertion of the overweak muscles by tuck or advancement. The first contemplates a weakening procedure, the latter a strengthening one. A very large proportion of squints can be corrected by a strengthening operation which is more physiological and better adapted to the needs of civilization. Squint cases are divided into two classes, (1) alternating and (2) unilateral. In the first there is usually good vision in the squinting eyes and these cases seem to offer a reasonable chance of restoring binocular single vision. In the second class the squinting eye has usually low vision and offers a prospect but for a good cosmetic result. In the first class if the degree of squint is greater than can be corrected with a tucking or advancement of one muscle, Robin does not hesitate to operate in like manner on the other eye. Forty degrees in the highest deviation the author has succeeded in curing with a bilateral tucking. If this is not sufficient a tenotomy of the internus is done guided by the tropometer findings. In unilateral squint the procedure is different. A tucking of one muscle and a tenotomy of the opponent is made at one sitting. In exotropia the same principles prevail. A greater effect is ob-

tained from the tucking of both external recti than from tucking of both internal recti, due perhaps to the more posterior insertion of the external recti.

While results in operations on the lateral muscles are often brilliant, the tucking operation is particularly well adapted to vertical deviations. A right hyperphoria or tropia, for instance, of 7 degrees, can be wholly corrected by a tuck of the right inferior rectus. Tenotomies of vertical muscles are on the whole disappointing and unsatisfactory. For the operation local anæsthesia is used, cocain and adrenalin being injected along each rectus muscle well behind the equator. Robin describes his technique with regard to the anæsthesia, and also the operative procedure. A number of case reports are given in detail, which possess considerable interest. One in particular, in which vision rose in an amblyopic eye from 3/200 before operation to 20/20 after operation and with glasses. Binocular single vision was also restored. The patient was 19 years of age.

EXOPHTHALMOS IN LEUKÆMIA.

The following abstract of Schiötz' article (*Tidsskr. f. d. Norske Lægeforening*, XXXVI, 545, 601) is taken from the *Lancet*, August 5, 1916: "Dr. Schiötz describes the case of a cellulose worker, aged 22, who had an attack of "influenza" at the beginning of 1915, and remained unwell thereafter. During May and June he was ill in bed with headache, chilliness, dizziness, and increasing exhaustion, while his sight became very bad for a time. Early in August his eyes began to protrude from their orbits, and diplopia and epiphora were noted. He went into the hospital and was found to have an enlarged liver, though the spleen could not be felt and the lymphatic glands were but little enlarged. The blood count showed 1,600,000 red cells per c. mm. and 84,000 white cells of which three-quarters were large lymphocytes 13 to 17 microns in diameter, 16 per cent. were small lymphocytes, 8 per cent. neutrophile cells; the red cells varied considerably in size and shape. Both eyes protruded, particularly the right, and showed limited movements. Both conjunctivæ were chemotic, on the right side so much so that the eye could not be closed. The optic discs looked cloudy and were swollen two diopters high; there were hæmorrhages round the right disc. Examination of the patient's thorax with the Roentgen rays showed a general enlargement of the bronchial lymphatic glands on the right side. The patient was given arsenic

and at the same time was treated with Roentgen rays, the orbits, hepatic region and splenic region each received four exposures. So far as the eyes were concerned, the result was excellent; the exophthalmos and chemosis entirely disappeared within a fortnight. The patient continued to have headache at times, however, and the blood count exhibited little or no improvement, the percentage of hæmoglobin, measured by Sahli's method, falling in five weeks from 45 to 25. Dr. Schiötz notes that the temperature chart from time to time was just like that of tertian malaria, attacks of fever up to 102.4 degrees F., recurring at intervals of 48 hours for several days together. Discussing the ætiology of exophthalmos in leukæmia, he says that it is commonly attributed to the presence of lymphomas within the orbits. Dissatisfied with this explanation he develops at some length the view that it may be a toxic phænomenon, and may result from the action of toxin produced by the unknown infecting agent that causes leukæmia. He quotes the case of a farmer, aged 48, whom he saw in 1914, who developed slight exophthalmos apparently as the result of smoking too much tobacco, and notes that nicotine poisoning can produce widening of the palpebral fissure and protrusion of the eyeball in experimental animals. Other drugs capable of causing exophthalmos are adrenalin, paraphenylene diamine, salvarsan, tetrahydronaphthalylamine, and dionin. Among the diseases in which exophthalmos may sometimes occur are Ibrahim's primary chronic arthritis of children, lead poisoning, malaria, pellagra and leukæmia. Dr. Schiötz points out that all the drugs he mentions are amino bodies, and he argues that probably something is amiss with the metabolism in the diseases in which exophthalmos sometimes occurs, with the result that toxic amino bodies, perhaps, connected with the purins, find their way into the circulation and cause protrusion of the eyeballs. He thinks it doubtful whether this protrusion can be brought about by stimulation of the weak layers of involuntary muscles found in the orbits.

THE NON-GONORRHOËAL TYPE OF OPHTHALMIA NEONATORUM.

In a paper intended principally for the general practitioner, Thompson, of Kansas City (*Jour. Mo. State Med. Ass'n*, January, 1917) discusses ophthalmia neonatorum with reference to its non-gonorrhœal features. It is well occasionally to remind the general profession in order that they may eradicate the idea, in the minds of the laity, that ophthalmia neonatorum is always a

venereal disease. Much of the opposition which has come to the compulsory notification of this disease has been due to the shame supposed to be necessarily attached. The figures of Williams and Rosenberg are given showing an incidence of the gonococcus in but a little more than one-third the cases observed. This may not be the true ratio, but certain it is that many cases of ophthalmia neonatorum are due to causes other than the gonococcus. Thompson states that it is quite safe to consider as gonorrhoeal all acute blenorrhoea in infants five or six days old where the flow of pus is excessive and the lids greatly swollen. Gonorrhoeal ophthalmia is not always virulent, whereas a staphylococcus aureus infection may be acute and virulent and extremely difficult to differentiate except by cultural and the Gram methods. The author has never cured a gonorrhoeal ophthalmia in an infant in less than three weeks, and agrees with Roemer that the disease runs a definite course no matter what treatment is used. It is a matter more of cleansing than of remedies. The pneumococcus occasionally is a cause and is prone to produce corneal ulceration, especially at the margins. Thompson thinks there is a type of ophthalmia which he terms leucorrhoeal ophthalmia. The search for the cause of granulated lids gave rise to inclusion blenorrhoea. This disease lasts from two to six weeks and leaves the conjunctiva healthy. Blenorrhoea from the diphtheria bacillus, Koch-Weeks, or Morax-Axenfeld organism in the new born, is exceedingly rare. In many cases of acute ophthalmia no organism whatever is found, and the author assumes that in such instances some unknown infection is present. Of all the remedies silver nitrate is looked upon as possessing the greatest virtue. All cases of ophthalmia neonatorum should be energetically treated and carefully watched, no matter what is the cause of the infection.

OBITUARY.

James Wendell Reber, M.D., Philadelphia; Beaumont Hospital Medical College, St. Louis, 1889; aged 50; a Fellow of the American Medical Association; formerly assistant physician at the State Hospital for the Insane, Norristown, Pa.; professor of Ophthalmology in Temple University and the Philadelphia Polyclinic; once president of the American Academy of Ophthalmology and Oto-Laryngology; died at his home in Germantown, December 30, from pneumonia.